

REMARKS

Claims 1 – 19 are currently pending in the application. Applicants amend claims 1, 2, 5, 8, 11, 13 and 17. No new matter is introduced. Support for the amendments may be found, for example, at page 6, line 29, to page 7, line 7 and page 32, line 26, to page 33, line 7 of Applicants' specification.

REJECTION UNDER 35 U.S.C. § 112

Claims 1 - 10 are rejected under the first paragraph of 35 U.S.C. § 112 as failing to comply with the written description requirement. Specifically, the Examiner finds that the amended claim language “specifications based on both externally provided software and internal software” is neither disclosed nor referenced in the original specification. Applicants amend claims 1, 2, 5 and 8 to recite “specifications based on one of externally provided software and internal software” (emphasis added), and submit that support for this limitation may for example be found at page 6, line 29, to page 7, line 7 of the specification, which provides that:

controller 15 of the switching apparatus 10 has a software for testing the information notification function for the predetermined specification, or the software for testing the information notification service function is downloaded by the console 60.

Accordingly, Applicants respectfully request that this rejection be withdrawn.

REJECTION UNDER 35 U.S.C. § 103

Claims 11 - 16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,272,174 to Ta et al. in view of U.S. Patent No. 5,337,051 to Tsui et al. Claims 17 – 19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,857,011 to Kennedy et al. in view of Ta and Tsui.. Applicants amend claims 11, 13 and 17 to further clarify the nature of their invention, and respectfully traverse these rejections.

In independent claims 11, 13 and 17, Applicants disclose an FSK signal demodulator and demodulation method, the method comprising: a) a zero crossing point calculation step in which said zero crossing point is calculated based on two successive samples of said FSK signal using a linear approximation, b) a zero crossing point interval calculation step, c) a mark/space transition point calculation step, d) a bit point calculation step which decides a bit point based on a mark/space transition point calculated by said mark/space transition point calculation step, and e) a bit decision step which decides a bit value based on said bit point calculated by said bit point calculation step. The bit value is decided during a period smaller than the full period between successive bit points so that the bit value is decided at other than a bit boundary. This novel approach helps to avoid erroneous bit decisions that are characteristic of bits decided at or near bit boundaries.

Ta discloses a non-coherent frequency shift keying (FSK) detection scheme applied to capturing caller ID information in a low power mode (see, e.g., abstract of Ta). According to the scheme of Ta, a high sampling frequency (“preferably 30 – 50 times higher than the frequency shift keying symbol rate”) so that zero crossing point may be estimated at the signal sign transition point among the measured samples (see, e.g., column 3, lines 5 – 15 and column 5, lines 24 – 27 of Ta). By means of the claimed linear approximation method employed by Applicants’ invention, a much lower sampling rate can be employed without experiencing a significant deterioration in accuracy (for example, 8 kHz as opposed to 38.4 kHz as recommended in Ta). The Examiner acknowledges that Ta fails to suggest a zero crossing point calculated based on two successive FSK signal samples using linear approximation, and cites Tsui for this purpose.

Tsui teaches a technique for measuring frequency by determining zero crossings, wherein zero crossing are determined by performing linear approximation between sample points of opposite sign to approximate the crossing point (see, e.g., column 2, lines 10 – 23 and FIG. 3 of

Tsui). However, each of Ta and Tsui, alone and in combination, fail to disclose or otherwise suggest Applicants' claimed step making a bit decision where the bit value is decided during a period smaller than the full period between successive bit points, so that the bit value is decided at other than a bit boundary

. As a result, Applicants submit that independent claims 11, 13 and 17 are allowable over the cited art. As claims 12, 14 – 16, 18 and 19 each depend from one of allowable claims 11, 13 and 17, Applicants further submit that claims 12, 14 – 16, 18 and 19 are allowable for at least this reason.

CONCLUSION

An earnest effort has been made to be fully responsive to the Examiner's objections. In view of the above amendments and remarks, it is believed that claims 1 – 19, consisting of independent claims 1, 2, 5, 8, 9, 11, 13 and 17, and the claims dependent therefrom, are in condition for allowance. Passage of this case to allowance is earnestly solicited. However, if for any reason the Examiner should consider this application not to be in condition for allowance, he is respectfully requested to telephone the undersigned attorney at the number listed below prior to issuing a further Action.

Any fee due with this paper may be charged on Deposit Account 50-1290.

Respectfully submitted,



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Docket No FUJI 18.486 (100794-11695)
TJB:pm